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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,516	03/17/2004	Alexei V. Galatenko	03-2300	5456
24319	7590	08/29/2007		
LSI CORPORATION 1621 BARBER LANE MS: D-106 MILPITAS, CA 95035			EXAMINER SIEK, VUTHE	
			ART UNIT 2825	PAPER NUMBER
			MAIL DATE 08/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/803,516

Applicant(s)

GALATENKO ET AL.

Examiner

Vuthe Siek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 7 and 13 is/are rejected.
- 7) ☒ Claim(s) 2-6, 8-12 and 14-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This office action is in response to application 10/803,516 filed on 3/17/2004.

Claims 1-18 remain pending in the application.

### ***Claim Rejections - 35 USC § 112***

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 7 and 13 provide for “determining whether homeomorphism exists between logic trees A and B”, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 1, 7 and 13 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 1, 7 and 13 provide for “assigning same coordinates to nodes of degree  $\neq 2$  for optimizing design parameters”, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 1, 7 and 13 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

3. Claims 1, 7 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation of "for optimizing design parameters" is vague, because it is not clear as to what applicant intend to mean. The metes and bounds of the claims are not clearly defined.

Two Separate Requirements for Claims Under 35 U.S.C. 112, Second Paragraph. The second paragraph of 35 U.S.C. 112 is directed to requirements for the claims: The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. There are two separate requirements set forth in this paragraph: (A) the claims must set forth the subject matter that applicants regard as their invention; and (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. The first requirement is a subjective one because it is dependent on what the applicants for a patent regard as their invention. The second requirement is an objective one because it is not dependent on the views of applicant or any particular individual, but is evaluated in the context of

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whether the claim is definite — i.e., whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art. Although an essential purpose of the examination process is to determine whether or not the claims define an invention that is both novel and nonobvious over the prior art, another essential purpose of patent examination is to determine whether or not the claims are precise, clear, correct, and unambiguous. The uncertainties of claim scope should be removed, as much as possible, during the examination process. The inquiry during examination is patentability of the invention as applicant regards it. If the claims do not particularly point out and distinctly claim that which applicants regard as their invention, the appropriate action by the examiner is to reject the claims under 35 U.S.C. 112, second paragraph. In re Zletz, 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989). If a rejection is based on 35 U.S.C. 112, second paragraph, the examiner should further explain whether the rejection is based on indefiniteness or on the failure to claim what applicants regard as their invention. Ex parte Ionescu, 222 USPQ 537, 539 (Bd. App. 1984). (See MPEP 2171).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 7 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Maciej M. Syslo, "On the Fundamental Cycle Set Graph," IEEE, March 1982, pages 136-138.

6. As to claims 1, 7 and 13, Maciej M. Syslo teaches a method for performing logical transformations for global routing in an integrated circuit design, comprising steps of: (a) determining whether homeomorphism exists between logic trees A and B; and (b) when homeomorphism exists between said logic trees A and B, assigning same coordinates to nodes of degree  $\neq 2$  of said logic trees A and B (see whole document; paragraph III, starting page 137 described how to define whether two graphs are homeomorphic and removing nodes of degree  $\neq 2$ ). It is well known to optimize design parameters in any IC design including global routing of an IC design layout. Therefore, it would have obvious to practitioners in the art to utilizing the fundamental of homeomorphism concept include removing nodes of degree  $\neq 2$  as taught by Maciej M. Syslo to optimize design parameters in global routing because delete nodes or insert nodes or edges would expect to provide optimal global routing to comply with design constraints and requirements.

7. Claims 1, 7 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over David S. Johnson, "The NP-Completeness: An Ongoing Guide," Published in J. ALGORHTMS 2, 393-405 (1981), pages1-12.

8. As to claims 1, 7 and 13, David S. Johnson teaches a method for performing logical transformations for global routing in an integrated circuit design, comprising steps of: (a) determining whether homeomorphism exists between logic trees A and B;

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and (b) when homeomorphism exists between said logic trees A and B, assigning same coordinates to nodes of degree  $\neq 2$  of said logic trees A and B (see whole document; paragraph III, starting page 137 described how to define whether two graphs are homeomorphic and removing nodes of degree  $\neq 2$ ) (see whole document, especially pages 3-4, paragraphs [1] and [2]. It is well known to optimize design parameters in any IC design including global routing of an IC design layout. Therefore, it would have obvious to practitioners in the art to utilizing the fundamental of homeomorphism concept include removing nodes of degree  $\neq 2$  as taught by David S. Johnson to optimize design parameters in global routing because delete nodes or insert nodes or edges would expect to provide optimal global routing to comply with design constraints and requirements.

***Allowable Subject Matter***

9. Claims 2-6, 8-12 and 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rewritten to overcome 112/2 and 101 raised above.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on (571) 272-7483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Vuthe Siek/  
Vuthe Siek  
Primary Examiner, A.U. 2825